

WHAT IS CLAIMED IS:

1. A method for demultiplexing non-intensity modulated wavelength division multiplexed (WDM) signals, comprising:
  - 5 receiving a wavelength division multiplexed (WDM) signal having a plurality of non-intensity modulated optical information signals; and
  - converting a plurality of the non-intensity modulated optical information signals to intensity modulated signals while the plurality of non-intensity modulated optical information signals are multiplexed in at least a portion of the WDM signal.
2. The method of Claim 1, further comprising
  - 15 converting the plurality of non-intensity modulated optical information signals to intensity modulated signals using a asymmetric Mach-Zender interferometer.
3. The method of Claim 2, wherein the asymmetric Mach-Zender interferometer comprises a free spectral range coinciding with an integer multiple of a channel spacing of the WDM signal.
4. The method of Claim 2, wherein the Mach-Zender
  - 25 interferometer comprises a free spectral range coinciding with a channel spacing of the WDM signal.
5. The method of Claim 1, further comprising converting all non-intensity modulated optical
  - 30 information signals of the WDM signal to intensity modulated signals simultaneously prior to first stage demultiplexing.

6. The method of Claim 1, wherein the plurality of non-intensity modulated optical information signals comprise a set of partially demultiplexed signals from the WDM signal.

5

7. The method of Claim 1, wherein the WDM signal includes a minimum channel spacing comprising a multiple of a symbol rate of the WDM signal within 0.4 to 0.6 of an integer.

10

8. The method of Claim 7, wherein the minimal channel spacing comprising a multiple of the symbol rate within substantially 0.5 of the integer.

15

9. The method of Claim 1, further comprising:  
separating the WDM signal into a plurality of partially demultiplexed signals using at least one wavelength interleaver; and  
converting non-intensity modulated optical information signals in each set simultaneously using an asymmetric Mach-Zender interferometer.

20

10. A system for demultiplexing non-intensity modulated wavelength division multiplexed (WDM) signals, comprising:

means for receiving a wavelength division  
5 multiplexed (WDM) signal having a plurality of non-intensity modulated optical information signals; and

means for converting a plurality of the non-intensity modulated optical information signals to intensity modulated signals while the plurality of non-  
10 intensity modulated optical information signals are multiplexed in at least a portion of the WDM signal.

11. The system of Claim 10, further comprising means for converting the plurality of non-intensity  
15 modulated optical information signals to intensity modulated signals using a asymmetric Mach-Zender interferometer.

12. The system of Claim 11, wherein the asymmetric  
20 Mach-Zender interferometer comprises a free spectral range coinciding with an integer multiple of a channel spacing of the WDM signal.

13. The system of Claim 11, wherein the Mach-Zender  
25 interferometer comprises a free spectral range coinciding with a channel spacing of the WDM signal.

14. The system of Claim 10, further comprising means for converting all non-intensity modulated optical  
30 information signals of the WDM signal to intensity modulated signals simultaneously prior to first stage demultiplexing.

15. The system of Claim 10, wherein the plurality of non-intensity modulated optical information signals comprise a set of partially demultiplexed signals from the WDM signal.

5

16. The system of Claim 10, wherein the WDM signal includes a minimum channel spacing comprising a multiple of a symbol rate of the WDM signal within 0.4 to 0.6 of an integer.

10

17. The system of Claim 16, wherein the minimal channel spacing comprising a multiple of the symbol rate within substantially 0.5 of the integer.

15

18. The system of Claim 10, further comprising:  
means for separating the WDM signal into a plurality of partially demultiplexed signals using at least one wavelength interleaver; and

20

means for converting non-intensity modulated optical information signals in each set simultaneously using an asymmetric Mach-Zender interferometer.

19. A demultiplexer for an optical receiver, comprising:

5 a format converter operable to receive a wavelength division multiplexed (WDM) signal having a plurality of non-intensity modulated optical information signals and to convert the non-intensity modulated optical information signals to intensity modulated optical information signals while multiplexed in the WDM signal; and

10 a plurality of demultiplexing elements each operable to separate a received set of intensity modulated optical information signals into a plurality of signals each having at least one intensity modulated optical information signal.

15 20. The demultiplexer of Claim 19, wherein the format converter comprises an asymmetric Mach-Zender interferometer.

20 21. The demultiplexer of Claim 20, wherein the demultiplex elements comprise Mach-Zender interferometers.

25